

WHAT IS CLAIMED IS:

1. A resource sharing apparatus, for enabling at least one peripheral apparatus to be shared by a plurality of personal computers, the resource sharing apparatus comprising:

5 an application specific integrated circuit (ASIC), comprising:

 a plurality of hubs, each of the hubs having a host port (B port),
and a plurality of peripheral ports (A port), wherein the hubs are one-to-one
coupled to the personal computers via the host ports;

 a plurality of device controllers, coupled to the peripheral ports,
10 wherein the device controllers are one-to-one coupled to the hubs for
stimulating the peripheral apparatus;

 a bus, coupled to the device controllers;

 a host controller, coupled to the bus, for stimulating peripheral
apparatus related functions of an operation system (OS) or a basis
15 input/output operation system (BIOS) in the personal computers, and
communicating with the device controllers via the bus;

 a root hub, comprising a host port and a plurality of peripheral

ports, wherein the host port of the root hub is coupled to the host controller, and the peripheral apparatus is coupled to one of the peripheral ports of the root hub; and

a central processing unit, coupled to the bus for controlling the
5 operation of the ASIC.

2. The resource sharing apparatus according to claim 1, wherein the hubs, the device controllers, and the host controller have interfaces of universal serial bus specifications.

3. The resource sharing apparatus according to claim 2, wherein the
10 peripheral apparatus comprises a printer.

4. The resource sharing apparatus according to claim 2, wherein the peripheral apparatus comprises a keyboard.

5. The resource sharing apparatus according to claim 2, wherein the peripheral apparatus comprises a mouse.

15 6. The resource sharing apparatus according to claim 1, wherein the resource sharing apparatus is used for enabling a first peripheral apparatus and a second peripheral apparatus to be shared by a plurality of personal

computers, the first peripheral apparatus is coupled to one of the peripheral ports of the root hub, and the resource sharing apparatus comprises:

a first switch, coupled to one of the peripheral ports of each hub; and

a second switch, coupled to the first switch, the root hub, and the
5 second peripheral apparatus, wherein the second peripheral apparatus is
coupled to the root hub or one of the hubs by the first switch and the second
switch according to a controlling signal from the central processing unit.

7. The resource sharing apparatus according to claim 6, wherein the
hubs, the device controllers, and the host controller have interfaces of
10 universal serial bus specifications.

8. The resource sharing apparatus according to claim 7, wherein the
first peripheral apparatus is a keyboard, and the second peripheral apparatus
is a mouse.

9. The resource sharing apparatus according to claim 1, wherein the
15 resource sharing apparatus is used for enabling a first peripheral apparatus
and a second peripheral apparatus to be shared by a plurality of personal
computers, the first peripheral apparatus is coupled to one of the peripheral
ports of the root hub, and the resource sharing apparatus comprises:

a switch, coupled to the second peripheral apparatus and one of the peripheral ports of each hub, wherein the second peripheral apparatus is coupled to one of the hubs by the switch according to a controlling signal from the central processing unit.

- 5 10. The resource sharing apparatus according to claim 9, wherein the hubs, the device controllers, and the host controller have interfaces of universal serial bus specifications.

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